



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No.: VA0089893
Effective Date: December 30, 2008
Expiration Date: December 29, 2013

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM

AND

THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, and Parts I and II of this permit, as set forth herein.

Owner: Halifax County Service Authority
Facility Name: Leigh Street Filter Plant
County: Halifax
Facility Location: 100 Leigh Street, South Boston

The owner is authorized to discharge to the following receiving stream:

Stream: Poplar Creek
River Basin: Roanoke River
River Subbasin: Roanoke River
Section: 2
Class: III
Special Standards: none

Steven A. Dietrich, PE
Steven A. Dietrich, PE, Regional Director, Blue Ridge Regional Office

15 December 2008

Date

7/7/2008 4:00:01 PM

Facility = Leigh Street Filter Plant

Chemical = chlorine

Chronic averaging period = 4

WLAa = 20

WLAc =

Q.L. = 100

samples/mo. = 15

samples/wk. = 4

Summary of Statistics:

observations = 1

Expected Value = 1000

Variance = 360000

C.V. = 0.6

97th percentile daily values = 2433.41

97th percentile 4 day average = 1663.79

97th percentile 30 day average = 1206.05

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 20

Average Weekly limit = 13.6745144371859

Average Monthly Limit = 10.6139061913459

The data are:

1000

*Current limits
remain protective.*

7/21/2008 4:30:47 PM

Facility = Leigh Street Filter Plant

Chemical = copper

Chronic averaging period = 4

WLAa = 7.5

WLAc =

Q.L. = 1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 9

Expected Value = 8.24444

Variance = 24.4695

C.V. = 0.6

97th percentile daily values = 20.0621

97th percentile 4 day average = 13.7170

97th percentile 30 day average = 9.94323

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 7.5

Average Weekly limit = 7.5

Average Monthly Limit = 7.5

The data are:

8

7

6

6

7

22

8

8.2

2

8/11/2008 3:12:03 PM

Facility = Leigh Street Filter Plant

Chemical = zinc

Chronic averaging period = 4

WLAa = 70

WLAc =

Q.L. = 10

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 9

Expected Value = 19.4444

Variance = 136.111

C.V. = 0.6

97th percentile daily values = 47.3164

97th percentile 4 day average = 32.3514

97th percentile 30 day average = 23.4510

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

15

15

16

13

20

27

17

31

21

***Planning Statement for VPDES Permit Application Processing
DEQ-SCRO***

VPDES	OwnerName	Facility	County
VA0089893	Town of South Boston	South Boston WTP	Halifax

Outfall #: 001

River Basin: Roanoke River

Receiving Stream: Poplar Creek

Subbasin: Roanoke River

Watershed Code: L64R

River Mile: 0.6

	MGD		MGD
1Q10	0.174	HF 1Q10	0.317
7Q10	0.207	HF7Q10	0.362
30Q5	0.290	HF30Q10	0.439
30Q10	0.265	HM	0.536

Modeling Notes

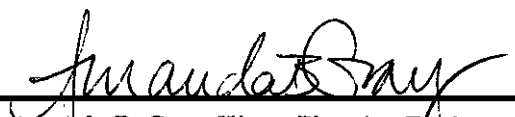
WQMP Name 9 VAC 25-720-80

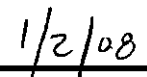
Statement There are no allocations set for this facility.

TMDL ID None

Impairment Cause

TMDL Due Date


Amanda B. Gray, Water Planning Engineer



Date

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
South Boston WTP – VA0089893

TO: Frank Bowman

FROM: Amanda Gray 

DATE: January 2, 2008

COPIES: File

This memo supersedes the October 27, 2003 memo to Bob Goode concerning the subject VPDES permit. The frequencies were not re-calculated since the gage on Georges Creek was discontinued in 1997. The High Flow 30Q10 has been included since it was not in the original determination.

The South Boston WTP discharges to the Poplar Creek in South Boston, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The USGS conducted several flow measurements on Lawson Creek from 1981 to 1984. The measurements were made at the Route 658 bridge at Turbeville, VA. The measurements made by the USGS correlated very well with the same day daily mean values from the continuous record gage on Georges Creek near Gretna, VA #02076500. The measurements and daily mean values were plotted on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gage were plotted on the regression line and the associated flow frequencies at the measurement site were determined from the graph.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gage, the measurement site and the discharge point are presented below:

Georges Creek near Gretna, VA (#02076500):

Drainage Area = 9.24 mi²

1Q10 = 1.5 cfs	High Flow 1Q10 = 3.3 cfs
7Q10 = 1.9 cfs	High Flow 7Q10 = 3.9 cfs
30Q5 = 3.0 cfs	High Flow 30Q10 = 5.1 cfs
30Q10 = 2.6 cfs	Harmonic Mean = 6.6 cfs

Lawson Creek at Rt. 658 at Turbeville, VA (#02075900):

Drainage Area = 8.7 mi²

1Q10 = 0.6 cfs	High Flow 1Q10 = 1.08 cfs
7Q10 = 0.71 cfs	High Flow 7Q10 = 1.23 cfs
30Q5 = 1.00 cfs	High Flow 30Q10 = 1.5 cfs
30Q10 = 0.90 cfs	Harmonic Mean = 1.83 cfs

Poplar Creek at discharge point:

Drainage Area = 3.94 mi²

1Q10 = 0.27 cfs (0.174 MGD)	High Flow 1Q10 = 0.49 cfs (0.317 MGD)
7Q10 = 0.32 cfs (0.207 MGD)	High Flow 7Q10 = 0.56 cfs (0.362 MGD)
30Q5 = 0.45 cfs (0.290 MGD)	High Flow 30Q10 = 0.68 cfs (0.439 MGD)
30Q10 = 0.41 cfs (0.265 MGD)	Harmonic Mean = 0.83 cfs (0.536 MGD)

The high flow months are January through May.

This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in Poplar Creek upstream of the discharge point.

If there are any questions concerning this analysis, please let me know.

MEMORANDUM
Department of Environmental Quality
South Central Regional Office

7705 Timberlake Road

Lynchburg, Virginia 24502

Subject: Planning Service Requests for VPDES Permit Application Processing

To: Amanda Gray, Water Planning Engineer

From: Frank Bowman

Date: December 28, 2007

Copies: Facility Permit Processing File, Planning File

The request for information from the planning section is to be made at the time of sending the reissuance reminder letter to the facility or, for an issuance or modification, at the time of application/modification request receipt.

FACILITY NAME: South Boston WTP

VPDES PERMIT NO. VA0089893

EXPIRATION DATE: 12/29/2008

PERMIT ACTION: Issuance ☒ Reissuance ☐ Modification

PERMIT TYPE: Major ☐ Minor ☒ Municipal ☒ Industrial ☐ Storm Water ☐ TMP ☐ TRE

PERMIT WRITERS: ATTACH THE FOLLOWING MAPS AND INFORMATION

- Topo map with facility location and outfall locations clearly marked (include any proposed outfalls)
- Site diagram for facilities with multiple outfalls
- Description or map showing effluent flow path if not apparent on topo map
- The outfall numbers, latitude, longitude, receiving stream and topo name in the table below (use an additional sheet if there are more outfalls)

Outfall No.	Latitude	Longitude	Receiving Stream	Topo Name
001	36° 41' 47"	75° 4' 37"	Poplar Creek	South Boston
		-78° 54' 37"		

✓ Check if a new FLOW FREQUENCY DETERMINATION is being requested.
If checked, provide the previous flow frequency determination memo

 Check if a new or revised WATER QUALITY MODEL is being requested.
If checked, provide the facility flow and the previous limitations page

DATE INFORMATION NEEDED January 28, 2008